

#### IV. REMARKS

Claim 1 is amended. Claim 37 is new.

Claims 1-5, 7-10 and 13 are patentable under 35 USC 102 over Mages (US 5772386). Claim 1 recites that the buffer transport is operative for moving the substrate magazine between a first position and a second position, wherein when in the first position the substrate magazine is located on a magazine support and communicates with the aperture, and when moved to the second position the substrate magazine is offset from the first position and is buffered adjacent the aperture while remaining on the magazine support, and wherein the first and second positions are horizontally coplanar. Mages does not disclose or suggest this feature.

There is nothing in Mages to suggest the transporting containers (46) "when moved to the second position the substrate magazine is offset from the first position and is buffered adjacent the aperture while remaining on the magazine support".

In Mages a gripper (53) which is moveable vertically and horizontally (by horizontal drive 55 and elevator 56) is used to lift the transporting containers (46) off the storage shelves (45) and transfer the containers for manually loading or removal from the storage through the lockable loading opening (50) (Col. 6, L. 16-32; Fig. 10) and vice versa. In Mages after the transport container (46) is grasped, it is transported horizontally from the storage shelf (45) into the open space (47) and is then transported vertically up to a plane which corresponds to the ergonomic height for manually charging the storage or to a plane for charging a platform of the loading and

unloading device (Col. 6, L. 27-32). The transporting container holder (52) of Mages on which the containers (46) are placed for loading and removing the containers (46) from the storage clearly is not moveable with the containers (46) as they are gripped and transported to the storage shelves (45) by the gripper (53). Thus, Mages cannot disclose that "when moved to the second position the substrate magazine is offset from the first position and is buffered adjacent the aperture while remaining on the magazine support" as recited in Applicant's claim 1.

Further, as can be clearly seen in Figure 10, the transporting containers are vertically buffered (see Fig. 10) which is not what is claimed in Applicant's claim 1. Applicant's claim 1 calls for horizontal buffering of the substrate magazines.

It is also noted that the lockable loading opening (50) of Mages is not the same as the "aperture" recited in Applicant's claim 1 because the entire transporting container (36) is removed from lockable loading opening (50) (Col. 6, L. 8-15). Thus, Mages does not disclose that "when in the first position the substrate magazine communicates with the aperture" as recited in Applicant's claim 1 because the aperture in Mages is configured to allow the passage of the entire transport container (36). Further, it is noted that the charging opening (27) of Mages cannot be "the first position" as recited by Applicant because the charging opening (27) is vertically aligned with the stack of buffered transporting containers (36) (See Figs. 4 and 10).

In addition the lockable loading opening (50) of Mages is not "configured for loading and unloading substrates from a substrate magazine" as recited in Applicants claim 1. As described above the lockable loading opening (50) only allows for introduction or

removal of the entire transport container into/from the open space (47) (Col. 6, L. 8-15; Fig. 11).

Therefore, Applicant's claim 1 is clearly distinguished over Mages because Mages does not disclose that "that the buffer transport is operative for moving the substrate magazine between a first position and a second position, wherein when in the first position the substrate magazine is located on a magazine support and communicates with the aperture, and when moved to the second position the substrate magazine is offset from the first position and is buffered adjacent the aperture while remaining on the magazine support, and wherein the first and second positions are horizontally coplanar" where the aperture is "configured for loading and unloading substrates from a substrate magazine" as recited in Applicants claim 1. Thus, claim 1 is patentable.

Claims 2-5, 7-10 and 13 depend either directly or indirectly from claim 1 and are patentable at least by reason of their respective dependencies.

Further, claim 5 recites that the second position is in a peripheral area and the first position is in a central area. This feature is not disclosed or suggested in Mages.

The Examiner argues that the limitations "central area" and "peripheral area" are broad and it is not stated in the claims relative to what the locations are central and peripheral to. However, the Applicant is allowed to be its own lexicographer and the claim language is to be interpreted in light of the specification. The terms "central area" and "peripheral area" are clearly defined in Applicant's specification at, for example, page 15, lines 3-6 and in Figure 7. Moreover, the terms "central" and "peripheral" are well known words and describe the

relationship between the first and second positions relative to each other.

The Examiner merely states that this feature is inherent and disclosed in figure 11 of Mages. However, the Figures of Mages disclose a storage having a first and second sides. On one side of the storage the transporting containers (46) are loaded or removed through the lockable loading opening (50). On the other side the transporting containers (46) are vertically stacked in the storage shelves (45). If the Examiner considers the position of the storage shelves (45) to be the first position, it is not located in a "central area" because the storage shelves are located on one side of the storage while the open space (47) is located on the other side. The same is true if the Examiner considers the open space (47) including the lockable loading opening (50) to be the "first position". There is no disclosure or suggestion in Mages of "the first position" being "in a central area" as recited by Applicant. Thus, claim 5 is patentable for this additional reason.

Claim 11 is patentable under 35 USC 103 over Mages. Claim 11 ultimately depends from claim 1 and is patentable at least by reason of its dependency.

Further, claim 11 recites that the sensor is rotatably mounted on a frame of the station such that upon removal of a door of the magazine, the sensor extends inside the magazine. Mages does not disclose how the sensor (21) is mounted as admitted by the Examiner in the Final Office Action.

All that is disclosed in Mages is that "an index sensor 21 detects the projections 18 and the disk shaped object 19 during the vertical adjustment of the transporting container 6". It

would not be obvious to one skilled in the art to modify Mages to achieve what is claimed in Applicant's claim 11 without the impermissible use of hindsight because there is no disclosure or suggestion that the sensor (21) is "rotatably mounted on a frame of the station such that upon removal of a door of the magazine, the sensor extends inside the magazine" as recited by Applicant.

It is also submitted that the Examiner is using hindsight in light of Applicant's disclosure in making the rejection as the Examiner explicitly refers to Applicant's disclosure in finding support for the rejection.

When "the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference". In re Rijckaert, 28 USPQ2d 1955, 1057 (Fed. Cir. 1993). The Examiner is requested to provide an indication as to where any such teaching, suggestion or motivation to modify Mages as suggested by the Examiner appears in the reference. Absent such a teaching, it is submitted that a *prima facie* case of obviousness over Mages under 35 U.S.C. 103(a) is not established.

Claims 11, 14-17, 19, 20, 22 and 24-28 are patentable under 35 USC 103 over Mages and Gordon (US 6013920).

Claim 11 ultimately depends from claim 1 and is patentable at least by reason of its dependency. Further, claim 11 is patentable over Mages for the reasons noted above. As such, the combination of Mages with Gordon does not disclose or suggest that the sensor is rotatably mounted on a frame of the station such that upon removal of a door of the magazine, the sensor extends inside the magazine.

The Examiner argues in his concluding remarks in the Final Office Action, that Gordon discloses rotatably mounting the sensor on the frame and extending the sensor into the FOUP. This is not what is disclosed in Gordon. In Gordon, the end effector (42) of the door removal system includes an optical wafer sensor (86) that is located near the top of the end effector (42). As can be seen in Figure 8, the pair of optical detectors (106) are mounted flush with the surface of the end effector (42).

The Examiner also argues that Gordon discloses the sensor "extending" into the FOUP at column 7, lines 42-45. However this cited portion of Gordon merely recites that optical detectors (106) are located somewhere within the stack of wafers (82) carried by the FOUP (22). Nowhere is it disclosed that the "sensor extends inside the magazine" as recited in Applicant's claim 11. If the sensor were to "extend" into the FOUP as the Examiner suggests it would collide with the wafers in the stack of wafers (82) as the end effector is moved downward.

There is simply no disclosure or suggestion in Gordon that the sensor (86) "extends inside the magazine" as recited in claim 11.

Furthermore, the sensor (86) in Gordon is only moved vertically or horizontally (Col. 4, L. 16-34). There is no disclosure or suggestion in Gordon that the sensor is "rotated" as called for in Applicant's claim 11. In Gordon, as the end effector (42) removes the door, the end effector (42) moves away from the FOUP carrying the sensor (86) away from the FOUP as well (See Figs. 4 and 5 of Gordon).

Thus, claim 11 is patentable over the combination of Mages and Gordon because their combination does not disclose all the features of claim 11.

Claim 14 recites that the fluidic magazine door drive comprises an encoder for determining the vertical position of the sensor. The combination of Mages and Gordon does not disclose or suggest this feature.

Mages discloses that the lifting cylinders (32, 33) are provided for vertical adjustment and for adjusting the arm (29) relative to the wall element. The lifting cylinder is swivelable together with the support plate (34) about an axis X-X until reaching a stop (35) by means of the action of the lifting cylinder. (Col. 5, L. 29-35). Mages does not disclose "encoders" on the lifting cylinders. Combining Mages with Gordon fails to remedy this defect.

Gordon merely discloses that the end effector (42) and the door drive mechanism (72) includes a lead screw (102) together with a stepping motor (104). Data specifying a Z-axis location for the FOUP (22) in Gordon can be obtained by counting pulses supplied to the stepper motor (104).

Thus, neither Mages nor Gordon, individually or in combination, discloses a fluidic magazine door drive that comprises an encoder for determining the vertical position of the sensor.

The only sensor disclosed in Mages is sensor (21) (Col. 5, L. 8-10). Although Mages does not disclose how the sensor (21) is mounted, Figure 1 of Mages clearly shows that the sensor is not mounted on the closure opener (23, 29). The sensor (21) in Mages works in conjunction with the elevator (5) for vertical indexing movement of the elevator (Col. 5, L. 2-10). Therefore, the sensor (21) cannot be an "encoder" as recited in Applicant's claim 14.

In Gordon the stepper motor (104) of the screw drive for opening the door is used to determine a location of the FOUP (22) and nothing more. As noted above the location of the screw drive is tracked by pulses supplied to the stepper motor (104). Therefore, the stepper motor of Gordon is not an "encoder" as called for in Applicant's claim 14.

Thus, claim 14 is patentable because the combination of Mages and Gordon does not disclose or suggest all the features of claim 14.

Moreover, one skilled in the art would not combine Mages with Gordon as suggested by the Examiner. In making the rejection of claim 14 the Examiner refers to the following features of Mages: the elevator (5) for positioning the open substrate magazine (6) and the sensor (21) for providing elevator vertical position information. However, these features do not determine the vertical position of a sensor of a fluidic magazine door drive. The sensor (21) in Mages is for indexing the movement of the elevator (5).

The end effector (42) and the door drive mechanism (72) of Gordon includes a lead screw (102) together with a stepping motor (104). The stepper motor (104) of the screw drive for opening the door is used to determine a location of the FOUP (22) and nothing more. The position of the drive for opening the door is tracked through pulses that are supplied to the stepper motor (104). Thus, there is no need to provide an "encoder" on the lead screw drive of Gordon.

The combination of Mages with Gordon is based solely on the impermissible use of hindsight in light of Applicant's disclosure as none of the features of the references cited by the Examiner when combined disclose what is claimed by Applicant. If Mages




and Gordon were combined the result would be the elevator/storage system of Mages having the lead screw door opener of Gordon and nothing more.

Claims 15-17, 19, 20, 22 and 24-28 are patentable at least by reason of their respective dependencies.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,

  
\_\_\_\_\_  
Janik Marcovici  
Reg. No. 42,841

10/31/07  
\_\_\_\_\_  
Date

Perman & Green, LLP  
425 Post Road  
Fairfield, CT 06824  
(203) 259-1800  
Customer No.: 2512

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